TM 11-6625-823-15

TECHNICAL MANUAL

OPERATOR'S ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE MANUAL

TEST SET, BATTERY AN/PSM-13 (NSN 6625-00-868-8344)

This copy is a reprint which includes current pages from Changes 1 through 4.

HEADQUARTERS, DEPARTMENT OF THE ARMY
FEBRUARY 1968

WARNING

Adequate ventilation should be provided while using TRICHLOROTHRIFLUOROETHANE. Prolonged breathing of vapor shoudd be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

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DEPARTMENT OF THE ARMY
WASHINGTON, DC, *26 February 1968*

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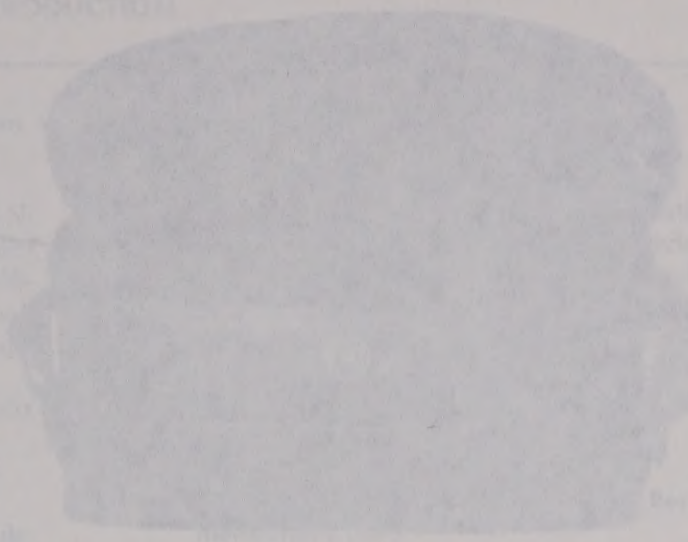

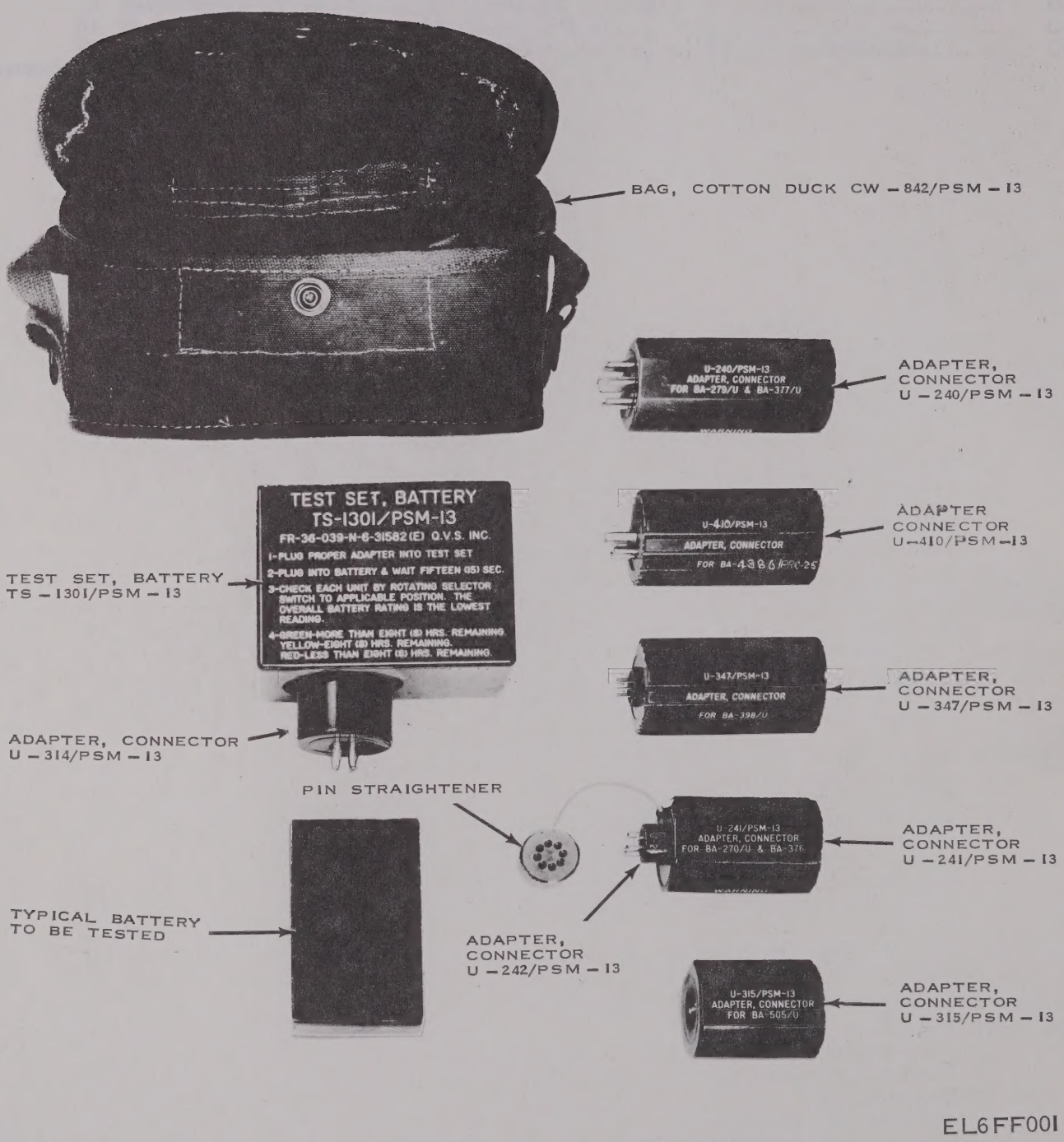

Figure 1–1. Test Set, Battery AN/PSM–13.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1–1. Scope

a. This manual describes Test Set, Battery AN/PSM–13 (fig. 1–1) and provides instruction for operation and maintenance. Test Set, Battery AN/PSM–13 is referred to as the *battery tester* in this manual. The manual also contains a basic issue items list (app B) and a maintenance allocation chart (app C).

b. Appendix C is current as of 3 June 1977. Appendix B is current as of 24 April 1973.

1–2. Indexes of Publications

a. DA Pam 310–4. Refer to DA Pam 310–4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310–7. Refer to DA Pam 310–7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1–3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those described by TM 38–750, the Army Maintenance Management System.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700–58/NAVSUPINST 4030.29/AFR 71–13/MCO P4030.29A, and DLAR 4145.8.

c. Discrepancy in Shipment Record (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55–38/NAVSUPINST 4610.33B/AFR 75–18/MCO P4610.19C and DLAR 4500.15.

1–3.1. Reporting of Errors

Report of errors, omissions, and recommendations for improving this equipment manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL–ME–MQ, Fort Monmouth, NJ 07703.

1–3.2. Reporting Equipment Improvement Recommendations (EIR)

EIR can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure; just simply tell why the design is unfavorable or why a procedure is difficult. EIR may be submitted on SF 368 (Quality Deficiency Report). Mail direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL–ME–MQ, Fort Monmouth, NJ 07703. A reply will be furnished to you

1–3.3. Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740–90–1.

1–3.4. Destruction of Army Electronics Materiel

Demolition and destruction of electronic equipment will be under the direction of the commander and in accordance with TM 750–244–2.

Section II. DESCRIPTION AND DATA

1–4. Purpose and Use

The battery tester is used to test Batteries, Dry BA–270/U, BA–279/U, BA–376/U, BA–377/U, BA–386/PRC–25, BA–398/PRC–25, BA–399/U, BA–505/U, BA–4386/PRC–25, and BA–4505/U. It provides a determination of the remaining useful life of each battery section. The proper load is established by using Adapter, Connector U–240/PSM–13, U–241/PSM–13, U–410/PSM–13, U–314/PSM–13, U–315/PSM–13, or U–347/PSM–13 (adapter connector) specifically designed for each battery to be tested.

1–5. Tabulated Data

a. Test Set, Battery TS–1301/PSM–13.

Meter:

Sensitivity	1 milliampere (ma) ±1%.
Resistance at 25° C	100 ohms ±3.
Selector switch	Four-position rotary.

b. Adapter, Connector U–240/PSM–13.

Used to test	BA–279/U or BA–377/U.
Weight	5 ounces.

c. Adapter, Connector U–242/PSM–13 Mounted on Adapter, Connector U–241/PSM–13.

Used to test	BA–270/U or BA–376/U.

Weight ..... 4 ounces.

d. Adapter, Connector U-410/PSM-13

Used to test ..... BA-386/PRC-25 or BA-4386/PRC-25.

Weight ..... 4 ounces.

e. Adapter Connector U-314/PSM-13.

Used to test BA-399/U

Weight ..... 2 ounces.

f. Adapter, Connector U-315/PSM-13.

Used to test ..... BA-505/U or BA-4505/U.

Weight ..... 3 ounces.

g. Adapter, Connector U-347/PSM-13.

Used to test ..... BA-398/PRC-25.

Weight ..... 4 ounces.

1-6. Description of Test Set, Battery AN/PSM-13

(fig. 1-1)

Test Set, Battery AN/PSM-13 includes the following:

a. Test Set, Battery TS-1301/PSM-13. The TS-1301/PSM-13 consists of a meter, a selector switch, and a plug encapsulated in polyurethane or epoxy. The plug connects to any one of the Adapters, Connector U-240/PSM-13, U-241/PSM-13, U-410/PSM-13, U-314/PSM-13, U-315/PSM-13, and U-347/PSM-13. The adapter connector circuit points are connected through the plug to the meter for test. The selector switch connects the meter to any one of up to four of these test points. The meter indicates the battery condition.

b. Bag, Cotton Duck CW-842/PSM-13. The CW-842/PSM-13 holds the TS-1301/PSM-13 and any two of the adapter connectors. The CW-842/PSM-13 is equipped with two D-rings and two belt keepers. Belt inserts protect the adapter connector pins from physical damage. The longer adapter connectors will require removal of one of the felt spacers in the side pockets.

c. Adapter Connectors. The adapter connectors are designed for specific batteries and provide the proper load to test each section of the battery, thereby measuring battery potentials under simulated use. Adapters, Connector U-240/PSM-13, U-241/PSM-13, U-410/PSM-13, U-314/PSM-13, U-315/PSM-13, and U-347/PSM-13 have a socket which mates with the plug on the bottom of the TS-1301/PSM-13, and a plug which fits the appropriate battery socket of the battery to be tested. Adapter, Connector U-242/PSM-13 has a socket which mates with the plug on the U-241/PSM-13 and a plug which fits the BA-270/U and BA-376/U socket.

1-7. Items Comprising an Operable Equipment

NSN	Qty	Nomenclature, part No.	Fig. No.
6625-00-868-8344		Test Set, Battery AN/PSM-13 consisting of:	1-1
		NOTE The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.	
6625-00-936-5489	1	Test Set, Battery TS-1301/PSM-13: SM-C-165146; 80063	2-2
5935-00-832-4967	1	Adapter, Connector U-240/PSM-13: SM-C-165137; 80063	1-1
5935-00-087-1148	1	Adapter, Connector U-241/PSM-13: SM-C-165138; 80063	1-1
5935-00-832-4966	1	Adapter, Connector U-242/PSM-13: SM-B-165140; 80063	1-1
	1	Adapter, Connector U-410/PSM-13	1-1
5935-00-832-4969	1	Adapter, Connector U-314/PSM-13: SM-C-165142; 80063	1-1
5935-00-832-4949	1	Adapter, Connector U-315/PSM-13: SM-C-165143; 80063	1-1
5935-00-832-4970	1	Adapter, Connector U-347/PSM-13: SM-C-165144; 80063	1-1

CHAPTER 2
INSTALLATION AND OPERATION INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

2-1. Unpacking
(fig. 2-1)

a. Packaging Data. When packed for shipment, the components of Test Set, Battery AN/PSM-13 are all contained in a 9½- by 6¾- by 6-inch carton. A typical shipping carton is shown in figure 2-1. The volume is 38.5 cubic inches and the total weight is 4 pounds.

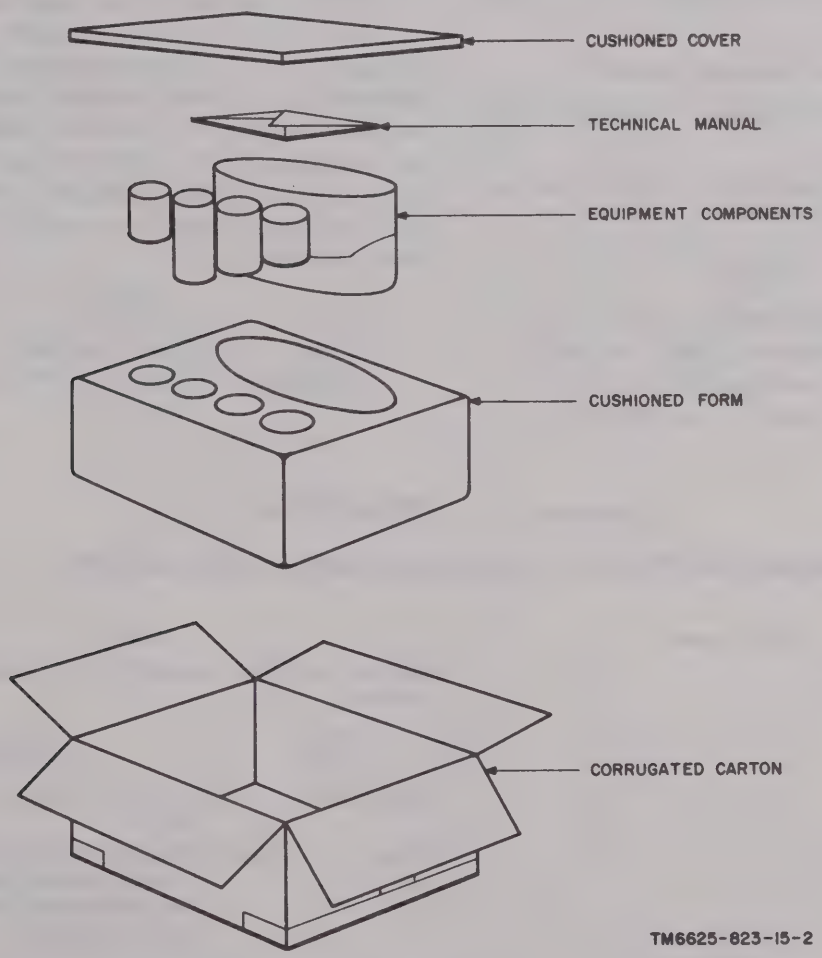

Figure 2-1. Typical packaging.

b. Removing Contents.

CAUTION

The minimum cushioning thickness is one-quarter of an inch; therefore, do not cut deeper than one-quarter of an inch.

(1) Cut and open the carton top.

(2) Remove the top cushioning material to reach the components. Adapter, Connectors U–240/PSM–13, U–241/PSM–13, U–242/PSM–13, U–314/PSM–13, and U–315/PSM–13 are packed in the cavities in the packing material. The U–242/PSM–13 is attached to the end of the U–241/PSM–13 to facilitate handling and prevent damage before packing. The U–410/PSM–13, and the U–347/PSM–13 are packed inside the bag with the TS–1301/PSM–13.

(3) Remove the technical manual.

(4) Remove the adapter connectors and the bag.

(5) Save the packaging material for use in reshipment.

NOTE

The bag accommodates only two adapter connectors and the TS–1301/PSM–13. The packaging form is a good storage place for adapter connectors not in use, preventing pin damage resulting from loose storage.

2–2. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para 1–3).

b. Check to see that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the basic issue items list (app B) and paragraph 1–7. Report all discrepancies in accordance with instructions given in TM 38–750. Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

c. If the equipment has been used or reconditioned, check to see whether it has been changed by a modification work order. If the equipment has been modified, the MWO number will appear on the front panel near the nomenclature plate. Check to see that any operational instruction changes resulting from the modification have been entered in the equipment manual.

NOTE

Current MWO's applicable to the equipment are listed in DA Pam 310–7.

Section II. OPERATION

2–3. Test Set, Battery AN/PSM–13 Operating Control and Indicator (fig. 2–2)

Control or indicator	*Function*
Meter (3-division scale)	Indicates remaining useful life of battery section as follows:

Division of scale	*Condition of battery section*
Red (BAD)	Less than 8 hours of remaining useful life.
Yellow	Remaining useful life is uncertain (Use battery only in fixed installation where the same type of battery is available.)
Green (GOOD)	More than 8 hours of remaining useful life.

Control or indicator	*Function*
Meter (decal on face of meter indicating a 10 division scale)	Used with adapter U–410/PSM–13 to test battery BA–4386/Prc–25 as follows:

Division of scale	*Condition of battery section*
On 5 or above	Has most of its capacity remaining. Battery will provide the following levels with the equipment listed:

Equipment	*Minimum Capacity (hours)*	*Total mean capacity available (hours)*
KY–38, HYL–3	34	40
AN/PRC–25, 77	49	55
AN/PPS–15	14	16

On 1.8	Enough energy to warrant continued use of battery. Will provide the following:

Equipment	*Minimum capacity (hours)*
KY–38, HYL–3	2.5
AN/PRC–25, 77	9.0
AN/PPS–15	4.0

Control or indicator	*Function*
Selector switch (4-position rotary)	Selects the section of the battery to be tested as follows:

Switch position	*Function*
A_1A	Connects section A_1 or A to meter
C	Connects section C to meter
B_1A_2	Connects section B_1 or A_2 to meter
B_2	Connects section B_2 to meter

Figure 2–2. Operating control and indicator.

2–4. Testing Batteries

Caution

Rating indicated on AN/PSM–13 is valid *only* if the battery temperature is above +35° F.

For all the tests given below, the overall battery rating is the rating of the section of the battery that indicates the lowest rating. For example, if only one section indicates BAD, consider the rating of the overall battery to be BAD.

a. Test the BA–279/U or the BA–377/U as follows:

(1) With Adapter, Connector U–240/PSM–13, connect the octal socket end of the U–240/PSM–13 onto the octal plug on the bottom of Test Set, Battery TS–1301/PSM–13.

(2) Set the selector switch to A1A. Connect the BA–279/U or the BA–377/U to be tested onto the battery connector of the U–240/PSM–13; wait 15 seconds, and read the rating of the section.

(3) Set the selector switch to C, B1A2, and B2, in turn; wait 15 seconds at each switch position and read the rating of each of the remaining sections.

(4) Disconnect the equipment immediately after the test to prevent discharge of the battery and overheating of the adapter connector.

b. Test the BA–270/U or the BA–376/U as follows:

(1) With Adapter, Connector U–242/PSM–13 mounted on Adapter, Connector, U–241/PSM–13, connect the octal socket end of the U–241/PSM–13 onto the octal plug on the bottom of Test Set, Battery TS–1301/PSM–13.

(2) Set the selector switch to A1A. Connect the BA–270/U or the BA–376/U to be tested onto the battery connector of the U–242/PSM–13; wait 15 seconds, and read the rating of the section.

(3) Set the selector switch to C, B1A2, and B2, in turn; wait 15 seconds at each switch position and read the rating of each of the remaining sections.

(4) Disconnect the equipment immediately after the test to prevent discharge of the battery and over heating of the adapter connector.

c. Test the BA–4386/PRC–25 or BA–386/PRC–25 as follows:

WARNING

The U–410/PSM–13 adapter may overheat and cause burns to the operator, if connected more than 60 seconds.

NOTE

The meter must have a 0 to 10 division transparent decal on top of the face to modify the scale (fig. 2–3).

(1) With adapter Connector U–410/PSM–13, connect the octal socket end onto the octal plug on the bottom of Test Set, Battery TS–1301/PSM–13.

(2) Set the selector switch to B1A2.

(3) Connect the battery to be tested to the battery connector of the adapter.

(4) Wait up to 15 seconds to read the rating of the battery (para 2–3) then disconnect the equipment immediately.

CAUTION

The U–410/PSM–13 adapter may overheat and be damaged if connected more than 30 seconds.

d. Test the BA–398/PRC–25 as follows:

(1) With Adapter, Connector U–347/PSM–13, connect the octal socket end of the U–347/PSM–13 onto the octal plug on the bottom of Test Set, Battery TS–1301/PSM–13.

(2) Set the selector switch to A1A. Connect the BA–398/PRC–25 to be tested onto the battery connector of the U–347/PSM–13; wait 15 seconds, and read the rating of the section.

(3) Set the selector switch to B1A2; wait 15 seconds, and read the rating of the remaining section.

(4) Disconnect the equipment immediately after the test to prevent discharge of the battery and overheating of adapter connector.

e. Test the BA–399/U as follows:

(1) With Adapter, Connector U–314/PSM–13, connect the octal socket end of the U–314/PSM–13 onto the octal plug on the bottom of Test Set, Battery TS–1301/PSM–13.

(2) Set the selector switch to A1A. Connect the BA–399/U to be tested onto the battery connector of the U–314/PSM–13; wait 15 seconds and read the rating of the battery.

(3) Disconnect the equipment immediately after the test to prevent discharge of the battery and overheating of adapter connector.

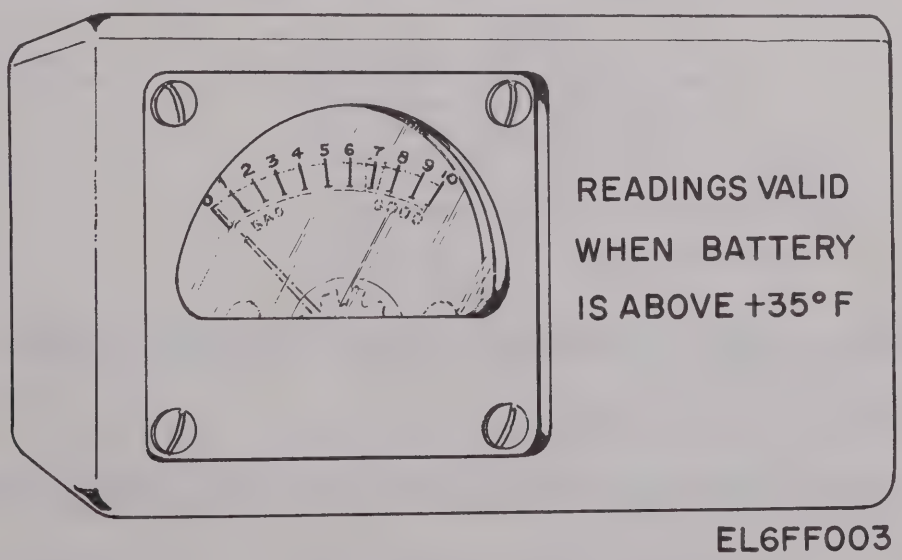

Figure 2–3. Meter face with 0 to 10 division decal.

f. Test the BA–505/U or BA–4505/U as follows:

(1) With Adapter, Connector U–315/PSM–13, connect the octal socket end of the U–315/PSM–13 onto the octal plug on the bottom of Test Set, Battery TS–3101/PSM–13.

(2) Set the selector switch to A1A. Connect the BA–505/U or BA–4505/U to be tested onto the battery connector of the U–315/PSM–13; wait 15 seconds, and read the rating of the battery.

(3) Disconnect the equipment immediately after the test to prevent discharge of the battery and overheating of adapter connector.

CHAPTER 3
OPERATOR AND ORGANIZATIONAL MAINTENANCE

3-1. Scope of Maintenance

The maintenance duties assigned to the operator and organizational repairman for the AN/PSM-13 are listed below, together with a reference to the paragraphs covering the specific maintenance function. These duties do not require any special tools or test equipment.

a. Operator's daily preventive maintenance checks and services chart (para 3-4).

b. Operator's weekly preventive maintenance checks and services chart (para 3-5).

c. Organizational monthly preventive maintenance checks and services chart (para 3-6).

d. Organizational quarterly preventive maintenance checks and services chart (para 3-7).

e. Cleaning (para 3-8).

f. Troubleshooting (para 3-9).

3-2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of the AN/PSM-13 to prevent occurrence of trouble, reduce downtime, and insure that the equipment is serviceable.

a. Systematic Care. Procedures given in paragraphs 3-4 through 3-8 cover routine systematic care and cleaning essential to the proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (para 3-4 through 3-7) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and the normal indications. The *References* column lists the paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by performing the corrective actions listed, a higher category of maintenance or repair is required. Records and reports of these checks and services must be made in accordance with requirements given in TM 38-750.

3-3. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the equipment are required daily, weekly, monthly, and quarterly. Paragraph 3-4 specifies the checks and services that must be done daily (or at least once a week if the equipment is maintained in a standby condition). Paragraphs 3-5, 3-6, and 3-7 specify additional checks and services that must be performed on a weekly, monthly, and quarterly basis, respectively.

3-4. Operator's Daily Preventive Maintenance Checks and Services Chart

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Completeness	Check to see that equipment is complete	Appendix B.
2	Exterior surfaces	Clean exterior surfaces, including panel and meter glass. Check meter glass for cracks.	Para 3-8.
3	Control and indicator	While making operations checks (item 4 below), check to see that the switch is smooth and free of external or internal binding, and that there is no excessive looseness. Also, check meter for sticking or bent pointer.	None.
4	Operation	During battery testing operation, be alert for any abnormal indication.	Para 2-4.

3-5. Operator's Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Bag	Check condition of CW-842/PSM-13	None.

3-6. Organizational Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Adapter connectors	Check sockets for broken or burnt contacts.	
2	Octal plug	Clean plug.	

3–7. Organizational Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	*Item to be inspected*	*Procedure*	*References*
1	Publications	Check to see that all publications are complete, serviceable, and current.	DA Pam 310–4.
2	Modifications	Check DA Pam 310–7 to determine whether new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38–750 and DA Pam 310–7.

3–8. Cleaning

Inspect the exterior of the equipment; exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

b. Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with trichlorotrifluoroethane.

c. Remove dust or dirt from the octal plug with a brush.

Caution

Do not press on the meter face (glass) when cleaning; meter may become damaged.

d. Clean the meter with a soft, clean cloth. If necessary, dampen the cloth with water; mild soap may be used for more effective cleaning.

3–9. General Troubleshooting Information

Troubleshooting the AN/PSM–13 at the organizational category is based on an operational check. To troubleshoot the AN/PSM–13, perform the operation functions until an abnormal indication or result is observed; then, perform the checks and corrective actions indicated in the troubleshooting chart. If the corrective measures indicated do not result in the correction of the trouble, higher category maintenance repair is required.

3–10. Organizational Troubleshooting Chart

Item No.	*Trouble symptom*	*Probable trouble*	*Checks and corrective measures*
1	Meter reading fluctuates	Dirty pin or plug	Clean pins and plugs.
2	Meter does not indicate condition of battery.	*a.* Selector switch position not set to proper position.	*a.* Set selector switch to proper position.
		b. Defective meter	*b.* Refer to higher category of maintenance for replacement.

CHAPTER 4
FUNCTIONING AND TROUBLESHOOTING

Section I. FUNCTIONING

4–1. Functioning of TS–1301/PSM–13 (fig. 4–1)

The selector switch SIA and SIB contacts on Test Set, Battery TS–1301/PSM–13 connect the meter across the two pins of the octal plug for each of the four switch positions. The meter connections are reversed to read the negative voltage when testing a C section of a battery.

4–2. Functioning of Adapter Connectors (fig. 4–1)

The adapter connectors have a load resistor for each battery section to be tested, except for the C battery section of the U–241/PSM–13. The load resistors simulate the battery drain when they are used in the appropriate radio equipment. The voltage-dropping resistor is in series with the meter; together they determine the ratio of current flow through the meter to the battery voltage. Because all battery sections are loaded when the test set is connected, regardless of what section is selected, the batteries must be disconnected as soon as testing is completed. The adapter connectors which have the higher wattage load resistors are cast in an aluminum filled material for maximum heat dissipation.

Section II. TROUBLESHOOTING

4–3. Troubleshooting Procedures

a. The first step in servicing a defective battery tester is to locate the component item or components not functioning properly. An operational test on good batteries is an excellent test of all the components.

b. A second AN/PSM–13 can be used on a swapping basis to locate which component is defective. One AN/PSM–13, known to be good, can save making many resistance checks if its items are substituted one by one during operational tests on the defective AN/PSM–13.

c. If no shortcut method is available, the troubleshooting chart can be used to suggest probable corrective action to common troubles.

d. The only electrical corrective action possible is to replace the meter; all the other components are expendable.

4–4. General Support Troubleshooting Chart

Note. The only test equipment required is Multimeter TS–352B/U, which is used to take continuity and resistance measurements.

Item No.	*Trouble symptom*	*Probable trouble*	*Checks and corrective measures*
1	No meter reading for any condition.	Meter defective	Replace meter (para 4–5).
2	No meter reading at one selector switch position.	Switch defective	Replace TS–1301/PSM–13.
3	No meter reading on one section of one adaptor connector.	Adapter connector defective	Replace adapter connector.

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Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
4	High meter reading on one section of one adapter connector.	Adapter connector defective	Replace adapter connector.
5	Erratic meter readings	*a.* Defective meter	*a.* Replace meter (para 4–5).
		b. Poor contacts in selector switch.	*b.* Replace TS–1301/PSM–13.
		c. Poor contact between adapter connector and TS–1301/PSM–13 main body, or battery being tested.	*c.* Clean, straighten, and inspect all connections.

4–5. Meter Replacement

a. Remove the four meter mounting screws, and invert the TS–1301/PSM–13 so that the meter falls into the hand. If gasket adhesion holds the meter in place, two long taper wood screws may be bound into the opposite mounting holes of the meter; then pull out the meter by these screws.

b. Unsolder the meter wires.

c. Be sure that the new meter has a gasket on it before proceeding. The gasket is keyed to the meter body.

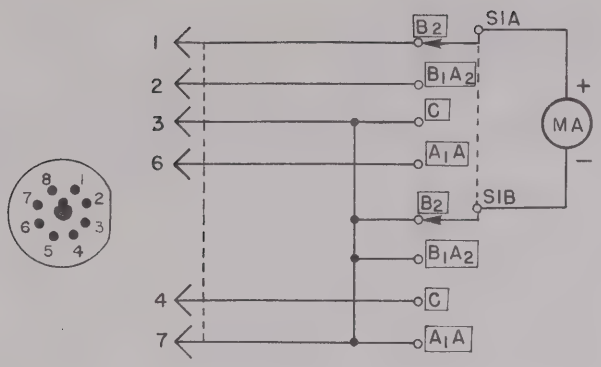
d. Solder the red wire to the left hand (+) terminal of a new meter.

e. Solder the black wire to the other terminal.

f. Remount the meter and tighten the corner mounting screws.

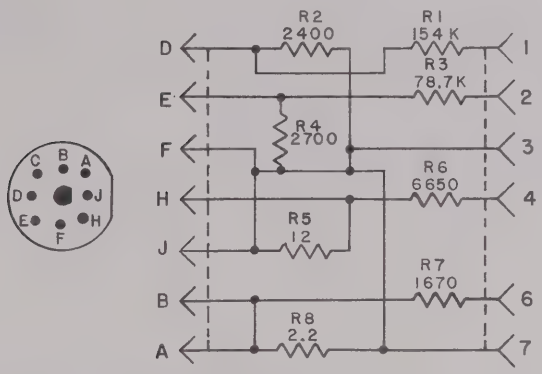
NOTE

If the replacement meter does not have a 0 to 10 division scale, a decal must be affixed to its face, as shown in figure 2-3.

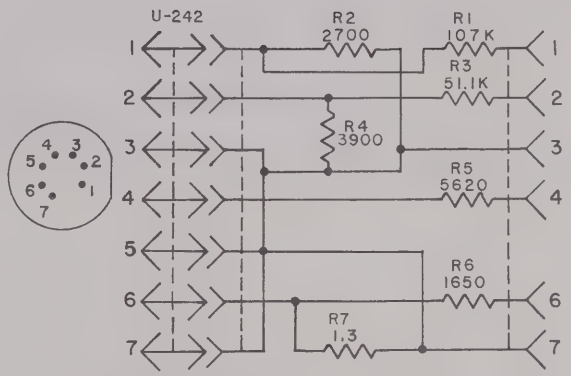


A. TEST SET, BATTERY TS-1301/PSM-13

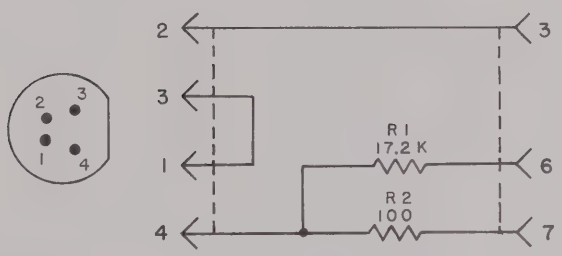
NOTES:
1. UNLESS OTHERWISE NOTED RESISTANCES ARE IN OHMS.
2. SWITCH POSITIONS ARE VIEWED FROM FRONT.
3. SOCKETS AND PLUGS ARE VIEWED FROM FRONT.
4. ▭ INDICATES EQUIPMENT MARKING.
5. OCTAL SOCKET CONTACT IDENTIFICATION:



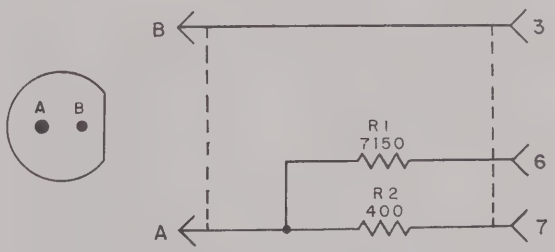
B. ADAPTER, CONNECTOR U-240/PSM-13



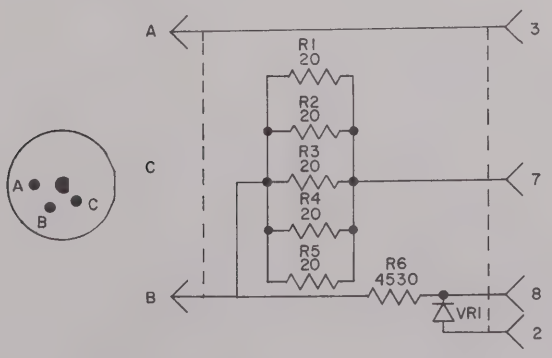
C. ADAPTERS, CONNECTOR U-241/PSM-13, AND U-242/PSM-13



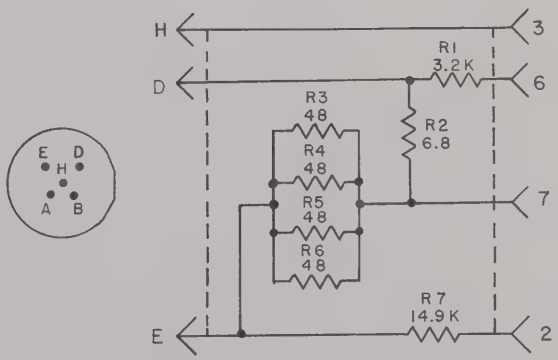
D. ADAPTER, CONNECTOR U-314/PSM-13



E. ADAPTER, CONNECTOR U-315/PSM-13



F. ADAPTER, CONNECTOR U-410/PSM-13



G. ADAPTER, CONNECTOR U-347/PSM-13

EL6FF004

Figure 4-1. Schematic diagram.

APPENDIX A
REFERENCES

The following is a list of references that should be available to the operator and maintenance personnel of Test Set, Battery AN/PSM-13:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	US Army Index of Modification Work Orders.
SB 38-100	Preservation, Packaging, Packing, and Marking Materials, Supplies, and Equipment Used by the Army.
TA 11-17	Signal Field Maintenance Shops.
TA 11-100 (11-17)	Allowances of Signal Corps Expendable Supplies for Signal Field Maintenance Shops.
TM 11-6625-366-15	Operator's, Organizational, DS, GS, and Depot Maintenance Manual: Multimeter TS-352B/U.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

APPENDIX B

BASIC ISSUE ITEMS LIST (BIIL) AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST (ITIAL)

Section I. INTRODUCTION

B–1. Scope

This appendix lists only basic issue items required by the crew/operator for installation, operation, and maintenance of Test Set, Battery AN/PSM–13.

B–2. General

This Basic Issue Items and Items Troop Installed or Authorized List is divided into the following sections:

a. Basic Issue Items List—Section II. A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.

b. Items Troop Installed or Authorized List —Section III. Not applicable.

B–3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

a. Illustration. This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item Number.* Not applicable.

b. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

d. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., and is identified in SB 708–42.

e. Description. Indicates the Federal item name and a minimum description required to identify the item.

f. Unit of Measure (U/M). Indicates the standard of basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in., pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. Quantity Furnished with Equipment (Basic Issue Items Only). Indicates the quantity of the basic issue item furnished with the equipment.

Section II. BASIC ISSUE ITEMS LIST

(1) Illustration		(2)	(3)	(4)	(5)	(6)	(7)
(A) Fig. No.	(B) Item No.	Federal Stock Number	Part Number	FSCM	Description Usable On Code	Unit of Meas	Qty Furn With Equip
1–1		6625–936–5490	753	89280	BAG, COTTON DUCK: CW–842/PSM–13	EA	1

APPENDIX C
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for Test Set, Battery AN/PSM-13. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Function.

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

C-3. Column Entries.

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the

listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of task-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

C — Operator/Crew
O — Organizational
F — Direct Support
H — General Support
D — Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

C-4. Tool and Test Equipment Requirements (Sec III).

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufactuers (5-digit) in parentheses.

C-5. Remarks (Sec IV).

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

SECTION II MAINTENANCE ALLOCATION CHART FOR

TEST SET, BATTERY AN/PSM-13

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	TEST SET, BATTERY AN/PSM-13	Visual	0.2						
		Service	0.3						
		Adjust	0.1						
		Service				1.0		2	
		Repair		0.1				1	A
		Repair				1.0		2,3	B
		Overhaul					1.0	2,3	
01	Test Set, Battery TS-1301/PSM-13	Visual	0.1						
		Service	0.1						
		Adjust	0.1						
		Test				0.5		2,3	
		Repair				1.0		2,3	
		Overhaul					1.0	2,3	
02	Adaptor, Connector U-240/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
03	Adaptor, Connector U-241/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
04	Adaptor, Connector U-242/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
05	Adaptor, Connector U-410/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
06	Adaptor, Connector U-314/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
07	Adaptor, Connector U-315/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
08	Adapter, Connector U-347/PSM-13	Inspect		0.1					
		Test		0.1				1	
		Replace		0.1					
09	Bag, Cotton Duck CW-842/PSM-13	Inspect		0.1					
		Replace		0.1					

SECTION III. **TOOL AND TEST EQUIPMENT REQUIREMENTS**
FOR
TEST SET, BATTERY AN/PSM-13

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O	MULTIMETER, AN/URM-105	6625-00-581-2036	
2	H,D	MULTIMETER TS-352B/U	6625-00-242-5023	
3	H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	

SECTION IV. REMARKS
TEST SET, BATTERY AN/PSM-13

REFERENCE CODE	REMARKS
A	Repairs by replacing defective components such as adaptor connections, knob and canvas carrying bag.
B	Replaces defective meters and expendable components to include performance test after repairs.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

USASA (2)
CNGB (1)
ACSC-E (2)
Dir of Trans (1)
CofEngrs (1)
TSG (1)
CofSptS (1)
USAARENBD (2)
USACDCEC (10)
USACDC Agcy (1)
USAMC (5)
USCONARC (5)
ARADCOM (5)
ARADCOM Rgn (2)
OS Maj Comd (4)
LOGCOMD (2)
USAMICOM (4)
USASTRATCOM (4)
USAESC (70)
MDW (1)
Armies (2)
Corps (2)
USAC (3)
Instl (2) except
  Ft Gordon (10)
  Ft Huachuca (10)
  WSMR (5)
  Ft Carson (25)
  Ft Knox (12)
Svc Colleges (2)
USASCS (20)
USASESS (40)
USAADS (2)
USAAMS (2)
USAARMS (2)
USAES (2)
USAIS (2)
USATC Armor (2)
USATC Inf (2)
USASTC (2)
Gen Dep (2)
Sig Sec, Gen Dep (5)
Sig Dep (12)
Army Dep (2) except
  LBAD (14)
  SAAD (30)
  TOAD (14)
  LEAD (7)
  SHAD (3)
  NAAD (5)
  SVAD (5)
  CHAD (3)
  ATAD (10)
AMS (1)
MAAG (2)
WRAMC (1)
USAMRL (5)
USARMA (2)
USARMIS (2)
USAERDAA (2)
USAERDAW (13)
USACRREL (2)
Army Pic Cen (2)
Sig FLDMS (2)
Units org under fol TOE (2 ea.):
  5-35
  6-365
  6-700
  6-705
  7
  11-57
  11-97
  11-98
  11-117
  11-127
  11-155
  11-157
  11-158
  11-500(AA-AC)
  11-587
  11-592
  11-597
  17
  19-87
  19-97
  19-500(EA)
  37

NG: State AG (3).

USAR: None.

For explanation of abbreviations used see AR 320-50.

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